Verification of Air Pollution Control Technologies
Technology Profile: Paint Overspray Arrestors

Brief Description

Paint overspray arrestors (POA's) used by the aerospace industry typically are composed of one or more stages of disposable fibrous filters. These stages include flat panel filters, pleated panel filters, and pocket filters. A common size is 24 inches square in cross-section. In practice, several POA's would be mounted to cover the entire wall of a paint booth where the air is exhausted. The POA's are replaced when they become loaded with paint, which could be several times each year for a busy facility. Often the first stage is changed more often than the more efficient (and expensive) second and/or third stage filters. The used POA's are disposed of and not reused.

Why does industry want POA performance verified?

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for Aerospace Manufacturing and Rework Facilities promulgated by the Environmental Protection Agency (EPA) require control of inorganic hazardous air pollutants from certain painting and depainting operations. Both new (construction begun after October 29, 1996) and existing (not new and less stringently controlled) sources of these pollutants use particulate filters (i.e., POA's) to meet regulatory filtration requirements determined by EPA's "Method 319: Determination of Filtration Efficiency for Paint Overspray Arrestors." Since verification testing of commercial POA's is performed by a qualified party independent of the POA manufacturers/vendors using stakeholder-reviewed protocols (based on Method 319) and EPA-approved quality assurance criteria, credible performance results are obtained. Verification reports of these results contain verification statements signed by responsible EPA and APCT Program officials and thus provide a valuable marketing tool for manufacturers/vendors and a useful resource for POA users, permitters, consultants, and other interested parties.

Whose technologies have been verified?

The performance of 11 POA's supplied by the listed 6 manufacturers has been verified. The verification statements and verification reports are available at http://etv.rti.org/apct/documents.cfm.

AAF	ATI	Columbus
Product 1- DriPak90-95% met new requirements. **Product 2-** DriPak40-45% met existing requirements.	**Product 1-** A-3000 5P Bag met new requirements. **Product 2-** OSM-2000 System met existing requirements.	**Product 1-** SL-90B 8 Pocket Bag met new requirements. **Product 2-** SL-46B met existing requirements.
215 Central Ave Louisville, KY 40208 Web: http://www.aafintl.com E-mail: rlong@aafintl.com Contact: Ron Long Phone: 502-637-0195	205 W 17th St. Ottawa, KS 66067 Web: http://www.ati-filters.com E-mail: Asteiden@ati-filters.com Contact: Alan Steiden Phone: 785-242-1811	2938 State Route 752 Ashville, OH 43103 Web: http://www.colind.com E-mail: mike_haufe@colind.net Contact: Mike Haufe Phone: 740-983-2552

Farr	Koch	Purolator
Product 1- Riga-Flo 200 met new requirements.	**Product 1-** Multi-Sak 6FZ159-S met new requirements. **Product 2-** Duo-Pak 650 met existing requirements.	**Product 1-** 3-stage system: D95084415, DMK804404, and PB2424 met new requirements. **Product 2-** 2-stage system: DMK804404, and PB2424 met existing requirements.
2201 Park Place El Segundo, CA 90245 Web: http://www.farrco.com E-mail: farr@farrco.com Contact: Don Thornburg Phone: 310-727-6300	P.O. Box 3186 Louisville, KY 40201-3138 Web: http://www.kochfilter.com E-mail: Info@kochfilter.com Contact: Mike Snow Phone: 502-634-4796	880 Facet Rd. Henderson, NC 27536 Web: http://www.purolatorair.com E-mail: justtom@inet4u.com Contact: Tom Justice Phone: 252-492-1141

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Why are POA's important to environmental protection?
Certain aerospace primer, topcoat, and depainting operations produce particulate emissions of inorganic hazardous air pollutants (e.g. , chromium). Filtering pollutants from the exhaust air of these operations with POA's reduces the emissions and protects public health.

General Market Information
How much does a POA cost?
The price for individual POA's meeting the NESHAP filtration requirements ranges from approximately $20 to $150 each.

Who are the users of POA's?
POA's are purchased by aerospace industry companies that paint equipment. Large facilities can use several thousand POA's each year.

General Test Information
Which ETV pilot is evaluating POA's?
The Air Pollution Control Technology (APCT) pilot is one of 12 pilots in the U.S. EPA's Environmental Technology Verification Program. The objective of the APCT pilot is to verify the performance of commercially ready air pollution control technologies, such as POA's. For the APCT pilot, EPA has selected Research Triangle Institute (RTI) as its partner. RTI (http://www.rti.org) is an independent nonprofit organization that serves government and industry clients in the U.S. and abroad.

What factor is verified in the POA tests?
The basic performance factor being verified is particle filtration efficiency as a function of size for particles from 0.3 to10 ：m (micrometers) in diameter. The APCT ETV Program developed a generic verification protocol for testing filtration efficiency that is based on EPA Method 319 (see http://etv.rti.org/apct/documents.cfm). The protocol was developed by RTI, reviewed by a technical panel of experts, and approved by EPA. The protocol addresses several testing and product definitions. A Test/Quality Assurance Plan (http://etv.rti.org/apct/documents.cfm) was prepared which addresses the quality assurance and quality control requirements for obtaining verification data of sufficient quantity and quality to satisfy the data quality objectives.

When were the tests conducted?
The first round of tests (five POA's) was conducted in March 1999. The second round of tests (six POA's) was conducted in September and October 1999.

For more information, contact:

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